



Research Article

IMPORTANCE AND NEED OF CORE SKILLS AND COMPETENCIES IN AGRICULTURAL EXTENSION CURRICULUM TO BRIDGE MISMATCH IN THE PRESENT JOB MARKET AND PERFORM JOB EFFECTIVELY

M. SHIVAMURTHY¹ AND A. MADHUSHREE^{*2}

¹ICAR-Emeritus Scientist Project, Department of Agricultural Extension, University of Agricultural Sciences, GKVK, Bengaluru, 560065, Karnataka, India

²ICAR-Emeritus Scientist Project, Department of Agricultural Extension, University of Agricultural Sciences, GKVK, Bengaluru, 560065, Karnataka, India

*Corresponding Author: Email - madhushree819@gmail.com

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Abstract: To address role of extension, it is critical to know the competencies of extension workers and how these competencies influence their performance. Discussion and debate about the need for process skills and core competencies among extension professionals is gaining wider currency. Hence, an attempt has been made to know the level of importance and need of core skills and competencies required for extension professionals to perform their job effectively. Considering the importance of contemporary extension roles, responsibilities a scale was developed having twelve broad areas of skills and competencies required for agricultural extension professionals for effective performance. Under each broad areas, individual skills and competencies were grouped. The professionals presently working in Government line departments and private firms are considered as respondents in order to check and analyze the level of importance and need of skills and competencies to be included in extension curriculum. Study revealed that majority of the respondents expressed the selected skills were in medium category of 38.31 per cent and 41.37 per cent of importance and need. Mean index scores were calculated to rank the skills and competencies and the results disclose that soft skills were ranked first followed by communication skills. It was also found that there is a significant relationship between level of importance and level of need for selected skills and competencies. This study recommends that in order to improve the performance of agricultural extension workers, the concerned authority should take into account the status of extension workers in terms of their competencies on skills and abilities in order to upgrade their commitment particularly towards rural communities and work, besides enhancing core extension services through upgraded education and training. This will ultimately help to bridge the gap between required skills to execute agricultural extension services and agricultural education and training.

Keywords: Extension workers, Skills and competencies, Performance, Education and training

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Introduction

Rapid pace changes in agriculture and demand for high quality products forces agricultural based institutions to meet the demands of farmers in the 21st century which have a substantial impact on roles and job performance of extension workers. As a result, traditional subsistence agriculture is gradually being replaced by market-oriented or commercial agriculture. This is mainly due to the rapid economic growth in both developing and developed countries, introduction of new technologies, market expansion, market liberalization, increased demand for qualitative and nutritious food, decreasing farming population as result of urbanization, liberalized and open economic policies, bilateral and multilateral economic agreements, creation of infrastructure facilities and strong agricultural policies.

Agricultural extension contributes to improving the welfare of farmers and others living in rural areas. Vibrant Extension advisory services and programs to strengthen the farmer's capacity to innovate by providing access to knowledge and information. However, the role of extension today goes beyond technology transfer to facilitation; beyond training to learning, and includes assisting farmer to form groups, dealing with marketing issues, addressing public interest issues in rural areas such as resource conservation, health, monitoring of food security and agricultural production, food safety, nutrition, family education, and youth development and partnering with a broad range of service providers and other agencies [1]. Hence, the present day field extension workers are required to be highly specialized and skilled to address diverse challenges and technical needs of farmers.

Under this circumstances it is essential to know the competencies of extension workers and how these competencies influence their performance. Furthermore, in the contexts of need for competitive agricultural extension; most of the studies generally focus on evaluation of extension system and methodology rather than assessing the extension personnel competencies. Professional discussions and technical debate about the need for process skills and core competencies among extension professionals is gaining wider currency. Indeed, having simple agricultural knowledge and resources are not all that matters; rather what matters most is how such knowledge and resources are utilized by majority of the farmers. Intelligence or knowledge only explains a part of what and how individuals work. Their skills, abilities, and attitudes are more pivotal in deciding how an extension workers perform. Knowing the levels of these traits is fundamental to maintaining competent human resources [2,3]. For this to happen, education and training should be tailored to field needs. This has led to increasing emphasis on the development of core competencies necessary for the extension workers to perform at maximum. Greater attention has to be given on improving the competencies of extension workers; identification of competencies levels and possessed, mechanisms for improving extension service delivery; and the reinforcement of competencies possessed by extension workers. Hence, an attempt has been made in this study to know the level of importance of core skills and competencies required by extension professionals to perform their job effectively.

Table-1 Personal and Social Profile of the extension professionals selected for the study

Variable	SN	Particulars	Frequency	Percentage
Age	1	<35 years	135	51.72
	2	35 to 55 years	110	42.14
	3	>55 years	16	6.13
		Total	261	
Gender	1	Male	195	74.71
	2	Female	66	25.28
	3	Other	0	0
		Total	261	100
Education	1	B.Sc.	53	20.30
	2	M.Sc	157	60.15
	3	Ph.D	39	14.94
	4	Post Doc.	02	0.70
	5	Other	10	3.83
		Total	261	100
Designation	1	Agriculture Department officers (AO- 46, AAO-22, ADA-21, JDA- 18)	107	41.00
	2	Horticulture Department officers (AHO-54, ADH-34,SADH-32)	120	45.97
	3	Coffee board Junior and Senior Liaison officers	34	13.02
		Total	261	100

Table-2 Level of Importance and level of need expressed by respondents on selected skills & competencies

Level of Importance				Level of Need			
SN	Particulars	Frequency	Percentage	SN	Particulars	Frequency	Percentage
1	High (>339.73)	93	35.63	1	High (>329.25)	92	35.24
2	Medium (339.73 – 296.72)	100	38.31	2	Medium (329.25-279.28)	108	41.37
3	Low (<296.72)	68	26.05	3	Low (<279.28)	61	23.37
	Total	261	100		Total	261	100
	Mean: 318.22	SD: 43.01			Mean: 304.26	SD: 49.98	

Material and Methods

By reviewing the research articles published in India and abroad and also through participatory methods like Focus Group Discussion and Field Workshops by involving all the stakeholders in extension education (Farmers, Extension Professionals, PG & PhD students and Teachers in extension education), most important skills and competencies were listed for effective filed extension work to accomplish the present-day job market. Listed core skills and competencies were further analyzed to eliminate the unimportant ones and by retaining the most important skills for developing an interview schedule by adopting the following procedures.

Taking into consideration of the scope and objectives of the study, an interview schedule was prepared by including the items from scale developed to measure the level of importance and need of the skills and competencies that an agricultural extension professionals require to perform their tasks and suitable changes were incorporated in the formation of items, questions and their sequences. Adequate caution was exercised to make the schedules unambiguous, clear, complete, comprehensive and understandable. Considering the importance of contemporary extension roles, responsibilities a scale was developed with twelve broad areas of skills and competencies required for effective performance of agricultural extension at the field level. Under each of the twelve broad areas individual specific skills and competencies were identified and grouped. Skills and core competencies considered for the present study were operationalized as the basic sets of knowledge, skills, abilities, and behaviors that agricultural extension professionals are required to acquire for effective performance. The following twelve skills and competencies were finally selected for analysis through discussion with field extension workers, administrators and experts in the field of agricultural extension [4-7].

Operationalizing Core Skills and competencies

1. Program Planning Skills: "Program planning skills and competencies" is operationalized as direction and intensity of agricultural extension efforts to bring about desirable change among farmers in view of national agricultural development strategies, programs, and policies. Nine items were included and assessed this area of competency.

2. Program Implementation Skills: "Program implementation skills and competencies" is operationalized as ability of agricultural extension professional to coordinate extension programs, demonstrate teamwork and negotiation skills, engage diverse local stakeholders, delegate responsibilities, and follow

participatory decision making in extension work. Eight items were considered and assessed under this competency.

3. Efficiency and Effectiveness of Extension Skills: Are required by agricultural extension professional to perform certain activities effectively to enhance the efficiency like linkages with other areas, co-ordinating with other firms, integrating with private firms and facilitating entrepreneurship etc., Nine items were considered and assessed under this competency.

4. Communication Skills: Are operationalized as ability of agricultural extension professionals to respect local culture, prepare reports of their work, share success stories and lessons learned, use various communication channels to disseminate information about important extension activities and programs, and possess good listening and public speaking skills. Four statements were administered to assess this competency.

5. Information & Communication Technologies (ICTs) skills: Are operationalized as ability of extension professionals to use computers, audio visual aids, mass media, mobile phones, and social media for communication, teaching, and learning. Six items were used to assess this competency.

6. Program Evaluation Skills: Are operationalized as ability of agricultural extension professionals to understand monitoring and evaluation concepts, conduct monitoring and evaluation of extension programs, develop data collection instruments, apply qualitative and quantitative tools to collect and evaluation of data, write evaluation reports, and share results with stakeholders. Four items were administered to assess this competency.

7. Professional Development skills: Are required for learning to maintain professional credentials such as practice principles of good governance, show commitment to career advancement, apply professional ethics in work, follow organizational policies & directives, and demonstrate positive attitudes toward extension work. Seven items were administered to assess this competency.

8. Personal skills: Personal skills are the qualities that can be considered as strengths, be it in professional life or personal life. Any individual with excellent personal skills is reliable and contributes to a work culture positively. Four items were administered to assess this competency.

9. Technical Expertise and Marketing Skills: Operationalized as ability of agricultural extension professionals to demonstrate basic disciplinary knowledge, understand the innovative technologies, educate community members about risks and uncertainties, use of publications, demonstrate agribusiness management, and facilitate entrepreneurship development. Eight statements were included and assessed under this competency.

Table-3 Ranking the skills & competencies with respect to level of importance and level of need

SN	Skills & competencies	Level of Importance				Level of need for inclusion in curriculum			
		Mean	SD	Mean Index	Rank	Mean	SD	Mean Index	Rank
1	Soft skills	18.06	2.81	0.90	I	17.61	3.29	0.88	I
2	Communication Skills	17.65	2.74	0.88	II	16.83	3.30	0.84	III
3	Personal skills	17.36	2.61	0.87	III	16.47	3.23	0.82	V
4	Entrepreneurship Development skills	30.32	4.93	0.87	III	29.58	5.18	0.85	II
5	Information & Communication Technologies (ICT) Skills	25.82	3.71	0.86	IV	24.78	4.50	0.83	IV
6	Programme planning skills	38.17	5.74	0.85	V	36.54	6.50	0.81	VI
7	Professional Development Skills	29.84	4.67	0.85	V	28.43	5.48	0.81	VII
8	Technical expertise and Marketing skills	34.03	5.22	0.85	V	33.04	5.80	0.83	IV
9	Leadership and Management Skills	20.84	3.42	0.83	VI	19.54	4.22	0.78	IX
10	Programme Implementation Skills	32.96	5.37	0.82	VII	30.71	6.63	0.77	X
11	Enhancing Efficiency and Effectiveness of Extension	36.72	6.2	0.82	VII	34.81	7.06	0.77	X
12	Programme Evaluation skills	16.46	2.95	0.82	VII	15.93	3.42	0.80	VIII

10. Leadership and Management Skills: Operationalized as the capacity of an agricultural extension professional's behaviour which emphasizes the quality of work, clarifies everyone's responsibilities, offers new approaches to problem solving and encourages decision making through groups. Five statements were administered to assess this competency.

11. Entrepreneurship development skills: Operationalised as the ability and readiness to develop, organize and run a business enterprise, along with any of its uncertainties in order to make a profit. Entrepreneur should be able to plan business, ready to take risk, innovative, manage finance etc., Developing these entrepreneurial skills is one of the most important competencies considered in extension education. Seven statements were administered to assess this competency.

12. Soft Skills: Are personal attributes that supports situational awareness and enhances an individual's ability to perform the job effectively. Four statements were considered and assessed under this competency.

Selection of respondents

The extension professionals presently working in development line departments, Farm Universities, ICAR institutions, NGOs and private firms working in the state of Karnataka were selected randomly as respondents in order to check and analyze the level of importance of skills and competencies required by extension professionals in the curriculum of extension education for effective performance of agricultural extension work at the field level.

The structured questionnaire was sent through Indian post as well as by google survey method and email to all the Agriculture and Horticulture departments of Karnataka state (30 Districts). With regard to private sector Coffee Board, Junior and Senior liaison officers working in different areas of Karnataka were considered as respondents to collect the data.

Extension Professionals selected for the study

Institutions addressing nations of the respondents	Number responded
Karnataka State Department of Agriculture (Agriculture Officer, Assistant Agriculture Officer, Assistant Director of Agriculture and Joint Director of Agriculture)	107
Karnataka State Department of Horticulture (Assistant Horticulture Officer, Assistant Director of Horticulture and Senior Assistant Director of Horticulture)	120
Private (Coffee board Liaison officers)	34
Total	261

Keeping in mind their experience in agricultural extension work, respondents were asked to rate the level of importance and need of the twelve skills and competencies on the following criteria:

1. Level of Importance: The listed skills & competencies were rated by the respondents to analyze the importance of skills and competencies required by extension professionals to improve their job performance at the field level. Following five-point continuum scale and weightage given for each response as suggested by Likert (1932) [8] was used to measure the level of importance as 1- Not important, 2-Slightly Important, 3- Moderately Important, 4- Important and 5- Very Important

2. Level of need for inclusion in the curriculum: This refers to the degree of need for selected skills and competencies for inclusion in the curriculum of extension education. Following five-point continuum scale and weightage given for each response as suggested by Likert (1932) was used to measure this. 1-No need for inclusion in the syllabus, 2- Slight need for inclusion, 3- Moderate need for inclusion, 4- High need for inclusion and 5- Very high need for inclusion.

Results and Discussion

Personal and Social Profile of the extension professionals

It is reflected from the [Table-1] that, majority (51.72 %) of the respondents belonged to young age followed by middle (42.14 %) and old age (6.13 %). More than half of the respondents (74.71%) are male and 25.28 per cent of the respondents are female. With respect to education 60.15 per cent of the respondents have done Master's Degree followed by Bachelor's degree and Doctor of Philosophy. Majority of the respondents were from Horticulture Department (45.97%) followed by Agriculture department (41.00 %) and Coffee Board (13.02%).

Categorization of importance and need of selected skills & competencies for inclusion in the curriculum

The data analyzed and presented in the [Table-2] indicates the overall level of importance and need for inclusion in the curriculum expressed by respondents with respect to selected skills and competencies. The respondents were categorized into high, medium and low based on Mean and half standard deviation ($\text{Mean} \pm 0.5 \text{ SD}$). Accordingly, majority of the extension workers were belonged to medium category (38.31%) in expressing the importance of skills and competencies followed by high and low category. With respect to level of need for inclusion in the curriculum 41.37 percent of respondents belonged to medium category followed by high category.

Ranking of skill & competencies based on level of importance and level of need for inclusion in the curriculum

The selected skills and competencies were ranked based on the level of importance and level of need for inclusion in the curriculum by calculating mean index scores for each skill and competences. The results presented in the [Table-3] clearly indicates that, soft skills are more important and needed to be included in the curriculum. Communication and entrepreneurship skills were considered as important and needed by respondents which ranked second and third followed by ICT skills as fourth. Programme planning skills, professional development skills, technical expertise and marketing skills were found to be ranked fifth as important and personal skills as fourth rank. These skills need to be considered for improving through training, field exposure, seminars, educational visits and interaction with experts etc and also may be considered and included in curriculum. Soft skills followed by communication and entrepreneurship development skills are found to be more important and needed to be included in the curriculum, this might be due to that these skills have more prominence and plays key role for effective and success of extension works at the field level. Hence, these skills are much important and needed by field level extension workers for effective performance.

Relationship Between Level of Importance and Level of Need for inclusion of selected skills& competencies in the curriculum

The relationship between level of importance and level of need was analysed by using Spearman rank correlation test as in [Table-4], the results specified that there was a positive and significant relationship between level of importance and level of need for inclusion in the curriculum at 1 per cent level which means the selected skills are very important, reflecting high degree of necessities to be included in the extension education curriculum.

Table-4 Relationship between level of importance and level of need, n=261

SN	Particulars	Mean scores	r _s
1	Level of Importance	318.30	0.75**
2	Level of Need	304.28	

Conclusion

The competencies required for agricultural extension workers are pervasive, universal, and variable. Competencies are considered important for effective performance of job to make it more meaningful and effective. However, the degree of application of these competencies will vary in relation to the area of usage. To help agricultural extension services are more transition to demand-driven, pluralistic and participatory and effective extension professionals have to be competent. Besides, a line of caution is that an effective performance of an extension worker can be achieved through appropriate agriculture extension policies and strategies. This study recommends that, in order to improve the performance of agricultural extension workers, the concerned authorities should consider the status of extension workers and their competencies, skills and abilities in order to upgrade their commitment towards farming communities in particular and their extension services in general through upgraded agricultural education and training. This will ultimately support in bridging the gap in accomplishing the present-day job market by providing the agricultural extension services in a more befitting manner.

As the income of the consumers is increasing, demand for quality food products is increasing besides need to increase the food production to meet the growing population. The major responsibility of extension is to increase the production, productivity and profit of the farmers by promoting innovative technological sustainability aspects of farming in both production and post-production marketing. With these situational needs of farmers is changing and it has continued to change, hence the role of agricultural extension also needs to align with the latest realities or challenges faced by the farming community particularly in respect to the national mandate of doubling farmers income.

Application of research: Today's agriculture confronts major challenges – food security, climate change, environmental sustainability, and uncertain markets which necessitates rural advisory services (RAS) to provide a wider range of services than ever before. At the same time, extension has increasingly been taken up by actors from the private sector, civil society, and farmer associations. Traditionally seen as production facilitators, extension workers are now called as support systems that foster interactions among agricultural actors and the institutions and policies that influence them. To carry out the new roles, extension professionals need different types of knowledge and attitudes along with more diverse skills and working patterns. To fulfil the roles and responsibilities, an extension agent should have adequate individual and organizational competencies to perform better at their job.

Research Category: Extension education and training

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